

California Department of Public Health Radiation Monitoring Report March 24, 2011

California Department of Public Health (CDPH) air monitors detected only trace amounts of radiation following the nuclear emergency in Japan. Radiation levels remain below the average amount from natural sources in California.

The air samples, taken in Eureka, Humboldt Bay, Richmond, Livermore, Avila Beach, San Luis Obispo, Los Angeles and San Diego from March 16-18 indicate the trace presence of Iodine-131. Testing from two of the sites, Livermore and San Luis Obispo, also showed trace amounts of another radioactive element, Tellurium-132.

The amounts are so small that according to U.S. Nuclear Regulatory Commission standards, they are at least ten thousand times less than amounts that would cause a public health concern. Due to the distance from Japan to the West Coast, no health impacts from the nuclear emergency in Japan are currently expected.

We are exposed to radiation every day, both from natural sources, such minerals in the ground or radiation from the sun, and from man-made sources such as medical x-rays. The average annual radiation dose per person in the U.S. is 620 millirem.

On the chart below, the numbers in the final column represent the additional dose (in millirems) to a person if they were breathing air for one year with the trace amounts of radiation detected. For example, in Eureka the readings indicate that an individual's annual radiation dose would increase by two tenths (0.20) of one millirem over the course of a full year. As a basis of comparison, a typical chest x-ray results in a dose of approximately 4-10 millirem. A Los Angeles-to-Chicago airplane flight results in a dose of approximately 2-3 millirem.

Sample Station	Date Collected	Results	Element Detected	Concentration Measured (picoCuries per cubic meter of air)	Radiation Dose per Year (millirem)
Eureka	3/16/2011	No Detections			
	3/18/2011	Detection of:	Iodine-131	0.79	0.20
Humboldt Bay	3/16/2011	No Detections			
	3/18/2011	Detection of:	Iodine-131	0.10	0.03
Richmond	3/16/2011	No Detections			
	3/18/2011	Detection of:	Iodine-131	0.19	0.05
Livermore	3/16/2011	No Detections			
	3/18/2011	Detections of:	Iodine-131 Tellurium-132	0.51 0.04	0.13 0.00
Avila Beach	3/16/2011	No Detections			
	3/18/2011	Detection of:	Iodine-131	0.64	0.16
San Luis Obispo	3/16/2011	No Detections			
	3/18/2011	Detections of:	Iodine-131 Tellurium-132	0.44 0.04	0.11 0.00
Los Angeles	3/16/2011	No Detections			
	3/18/2011	Detection of:	Iodine-131	0.22	0.06
San Diego	3/16/2011	No Detections			
	3/18/2011	Detection of:	Iodine-131	0.13	0.03

Notes:

CDPH has air sampling stations in eight locations in California. Samples collected from these stations are analyzed for radioactive elements including Barium-140, Cerium-141, Cerium-144, Cesium-134, Cesium-137, Iodine-131, Iodine-132, Ruthenium-103, Ruthenium-106, Tellurium-132, and Zirconium-95.

Estimated dose is calculated by methods described in Title 10 of the Code of Federal Regulations Part 20, Standards for Protection Against Radiation, Appendix B, Table 2. Dose values for each radionuclide assume the individual will be exposed at this concentration continuously over the course of a year. Information to date indicates that the duration of exposure should not exceed a few weeks.

Links to data: <http://www.cdph.ca.gov/programs/Documents/CDPH-RHB-PreLabAnalysis-2011-3-16-18.pdf>

Link to Air Sampling Map: <http://www.cdph.ca.gov/programs/documents/CDPH-RHB-SamplingStationMap.pdf>